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Illinois EPA (Environmental Protection Agency) Sludge Regulation Guidance Document

Illinois State Environmental Protection Agency
Springfield

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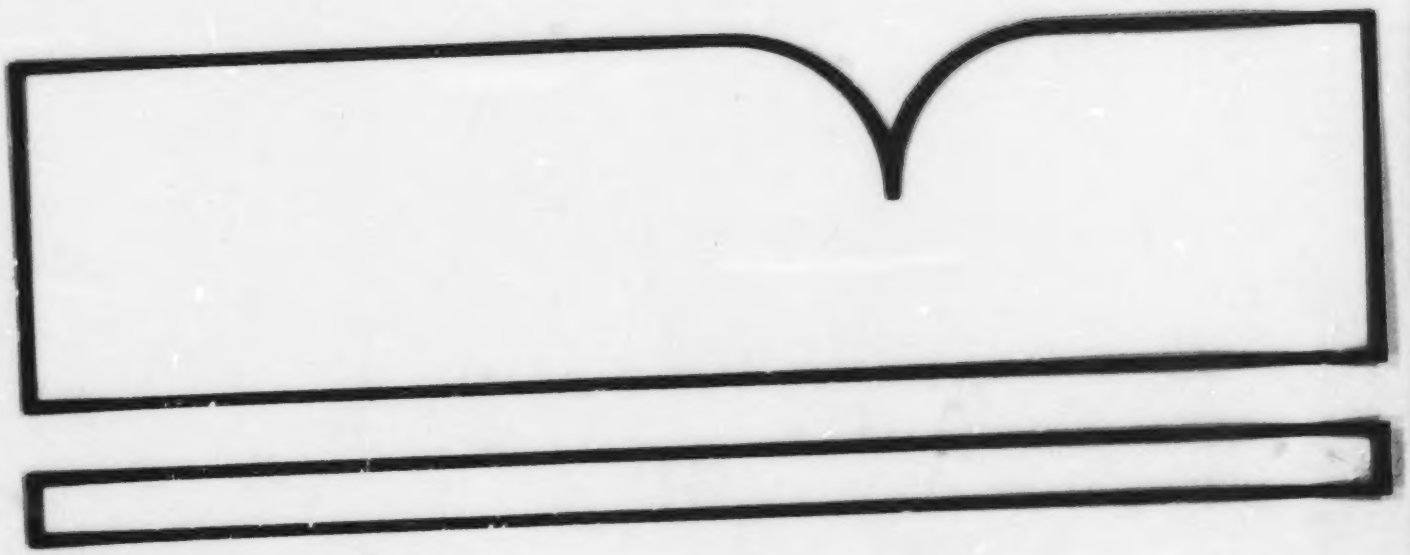

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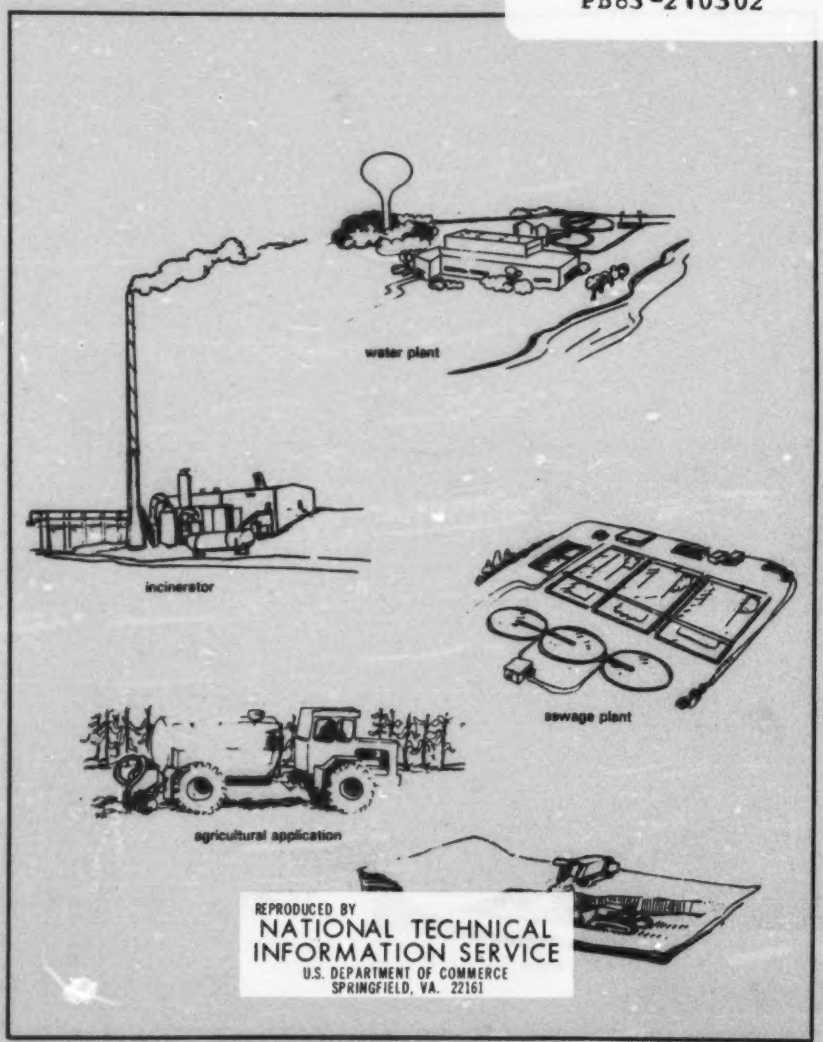

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Proper sludge management has become an increasing problem for municipalities, industries and private facilities across the State. All sludge generators are responsible for the proper disposal of sludge and must provide details of the plan for the ultimate disposal of sludge to the Agency as a part of any permit application for any facility which will generate a sludge.

Proper sludge disposal is paramount for municipal, industrial and private facilities and can include application to horticultural, silvicultural and agricultural land, landfilling, public distribution, discharge to a sanitary sewer and incineration, if adequate precautions are undertaken for the chosen alternative. Due to the importance of proper sludge disposal for all sludge generators, guidance pursuant to all Illinois Pollution Control Board Rules and Regulations on the ultimate disposal of sludge is necessary to give direction to generators, consultants, handlers, users and the general public.

This document is for use by all persons who generate, haul, use and dispose of any type of sludge. This document identifies the principal categories of sludge generators and advises these generators of several disposal techniques which are acceptable to this Agency, and advises persons involved with sludge generation, storage, treatment, and disposal of the applicable permit requirements.

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INTRODUCTION

Proper sludge management has become an increasing problem for municipalities, industries and private facilities across the State and nation. Sludge is a by-product of pollution control systems as well as industrial activities. Due to the increased production of sludges there has been a greater awareness of the need for proper sludge management by the sludge generators, users and the Agency. All sludge generators are responsible for the proper disposal of sludge and must provide details of the plan for the ultimate disposal of sludge to the Agency as a part of any permit application for any facility which will generate a sludge.

Since the term sludge has a number of connotations in industry and the regulatory field, for purposes of this document, sludge will be considered as the process side stream residual which consists of a solid material removed from the main stream process. The side stream usually has an initial form of a liquid/solids mixture of varying proportions.

Present practices of sludge disposal include incineration, landfilling, public distribution, agricultural, silvicultural and horticultural use and indiscriminate disposal. Proper sludge disposal is paramount for municipal, industrial and private facilities to meet all environmental rules and regulations. Proper sludge disposal can include application to horticultural, silvicultural and agricultural land, landfilling, public distribution, discharge to a sanitary sewer and incineration, if adequate precautions are undertaken for

the chosen alternative. Many water and wastewater treatment plant sludges and some industrial treatment plant sludges are considered to be a valuable resource which can be recycled in an environmentally acceptable manner on land for agricultural, horticultural or reclamation purposes. The Agency encourages the utilization of acceptable sludges on land to use this valuable resource where economically and socially feasible. Many industrial treatment plant sludges and some water and wastewater treatment plant sludges provide no benefit for agricultural purposes or are hazardous in nature and must be further processed or placed in a landfill for proper disposal. Due to the importance of proper sludge disposal for all sludge generators, guidance pursuant to all Illinois Pollution Control Board (IPCB) Rules and Regulations on the ultimate disposal of sludge is necessary to give direction to generators, consultants, handlers, users and the general public.

This document is for use by all persons who generate, haul, use and dispose of any type of sludge. The Agency's policy is to encourage the most economical and socially acceptable method for ultimate sludge disposal, when performed in an environmentally acceptable manner. This document identifies the principal categories of sludge generators and advises these generators of several disposal techniques which are acceptable to this Agency, and advises persons involved with sludge generation, storage, treatment, and disposal of the applicable permit requirements. This document does not preclude any person from utilizing any other disposal technique that is not covered. However, the applicant's responsibility will include demonstrating that any technique not covered in this document will not cause any environmental damage or harm. Sludge generators, haulers, and disposers are the responsible parties who must take the necessary steps towards having a successful sludge management program.

A

DEFINITIONS

Domestic Sludge — means the accumulated solids resulting from the treatment of sewage in treatment works receiving primarily domestic wastewater.

Generator — means a person who produces sludge.

Handler — means a person who transports sludge from a generator to a user or disposer of sludge. This could also include any person who provides interim storage of sludge.

Hazardous Waste — means a waste, or combination of wastes, which because of quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible, illness; or pose a substantial present or potential threat to human health or to the environment when improperly treated, stored, transported or disposed of, or otherwise managed, and which has been identified, by characteristics or listing, as hazardous pursuant to Section 3001 of Resource Conservation and Recovery Act (RCRA) of 1976, 42 U.S.C. par. 6901 *et seq.* or pursuant to Agency guidelines consistent with the requirements of the Act and Board regulations.

Industrial Process Waste — means any liquid, solid, or semi-solid or gaseous waste generated as a direct or indirect result of the manufacture of a product or the performance of a service which pose a present or potential threat to human health or to the environment or with

inherent properties which make the disposal of such wastes in a landfill difficult to manage by normal means. "Industrial Process Waste" includes but is not limited to spent pickling liquors, cutting oils, chemical catalysts, distillation bottoms, etching acids, equipment cleanings, paint sludges, incinerator ashes, core sands, metallic dust sweepings, asbestos dust, hospital pathological wastes and off-specification, contaminated or recalled wholesale or retail products. Specifically excluded are uncontaminated packaging materials, uncontaminated machinery components, general household wastes, landscape waste and construction or demolition debris.

Industrial Sludge — means sludge generated from sources other than domestic sewage or water treatment plants.

Person — means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, state, political subdivision, state agency, or any other legal entity, or their legal representative, agent or assigns.

Pollution Control Waste — means any liquid, solid, semi-solid or gaseous waste generated as a direct or indirect result of the removal of contaminant from the air, water, or land, and which pose a present or potential threat to human health or to the environment or with inherent properties which make the disposal of such waste in a landfill difficult to manage by normal means. "Pollution Control Waste" includes but is not limited to water and wastewater treatment plant sludges, baghouse dusts, scrubber sludges and chemical spill cleanings.

Sludge — means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

Sludge Disposal — means the ultimate deposition of sludge.

Sludge Disposer — means a person who accepts, utilizes or places sludge on land or in a landfill for ultimate deposition.

Sludge Storage — means the interim off-site containment of sludge prior to disposal or treatment.

Sludge Treatment — means any method, technique or process designed to change the physical form or chemical composition of sludge for sludge disposal.

Special Waste — means any "hazardous waste", "industrial process waste", or "pollution control waste".

B

DOMESTIC SLUDGE DISPOSAL

1. UTILIZATION ON AGRICULTURAL LAND, HORTICULTURAL, SILVICULTURAL USE, AND PUBLIC DISTRIBUTION

Utilization of digested domestic sludge on agricultural land is a much used practice that is encouraged by this Agency. Application of this sludge on agricultural land will conserve and utilize its nutrient value and provide humus and organic matter for deficient soils. The sludge must be applied at agronomic rates for the crops grown. The generator must provide information on environmental safeguards which must be taken to properly apply the sludge. Most domestic sludges are not considered a hazardous type waste and can be applied to agricultural land safely with minimal environmental problems. The

Agency strongly recommends that this alternative be evaluated for all domestic treatment plants, and utilized if feasible. In addition to technical considerations the success of these programs is dependent upon a good public relations program. The Agency recommends that sludge generators who apply sludge on agricultural land have a contingency plan to landfill their sludge during adverse or emergency conditions.

Programs that utilize sludge on agricultural land can also include sludge give-away programs for public distribution, horticultural or silvicultural use and sod farms. The users must be informed of the sludge characteristics and precautioned on how to properly handle and apply this sludge for their particular use.

The use of sludge on agricultural land, for horticultural or silvicultural use, sod farms use, and public distribution that have been practiced in the past have not been restrictive or placed an economic burden on the generators or users of sludge.

PERMIT REQUIREMENTS BY DWPC

2. LAND RECLAMATION PROJECTS UTILIZING DOMESTIC SLUDGE

Utilization of domestic sludge on spoiled land has been practiced with varying degrees of success. This practice is acceptable to this Agency provided the projects are carefully planned and implemented. The responsible parties for these projects must consider runoff control measures, groundwater and surface water protection, vegetation of the treated land, monitoring, application methods, and other necessary environmental control measures. The application rates are normally much greater than agronomic rates to provide sufficient nutrient value, humus and organic

matter to these spoiled lands for long term vegetative growths. Due to the high application rates additional environmental concerns may be necessary.

The Agency will allow the use of domestic sludge on spoiled land. The generators or users of the sludge to be applied in this manner are responsible for proper planning and environmental safeguards.

PERMIT REQUIREMENTS BY DWPC

3. LANDFILLING OF DOMESTIC SLUDGE

All domestic sludges are classified as a special waste. Although most domestic sewage sludges are not considered a hazardous waste, some domestic sludges contain high levels of heavy metals or may not be adequately digested. These factors may restrict the use of domestic sludge on agricultural land, land reclamation, or public distribution. These types of sludges may need to be placed in a landfill for the proper ultimate disposal. Some sludge generators have determined that it is more cost-effective or implementable to landfill their sludge rather than utilize other options. Domestic sewage sludge that is placed in a landfill must be tested to determine its physical and chemical composition. Since domestic sludges are classified as special wastes, the sludge generator is responsible for initiating the manifest system, the hauler shall have in his possession a current, valid waste hauling permit and the receiver of this sludge shall have in his possession a current, valid operating permit and the necessary supplemental permits.

Although this Agency will promote the land application of sludges, some sludges may have to be placed in a landfill. Landfilling of sludge is a viable alternative for ultimate sludge disposal where cost-

effective and socially acceptable. The generators must be assured that their sludge will be placed in a landfill if that is its destination.

PERMIT REQUIREMENTS BY DLPC

4. INCINERATION OF DOMESTIC SLUDGE

Although incineration of domestic sludge is an alternative, it has not been a widespread practice in the State. Previous use of incineration has proven this process to be a high energy intensive alternative and has been very expensive. The manifest system applies to domestic sludge which is incinerated off-site. Applicable air pollution emissions standards must also be complied with by the incineration unit. (See Sections **F** & **H**)

PERMIT REQUIREMENTS BY DAPC & DLPC — COORDINATED PERMIT REVIEW

C

INDUSTRIAL SLUDGE DISPOSAL

1. LAND APPLICATION OF INDUSTRIAL SLUDGE

Certain organic industrial sludges, such as cannery wastes, meat processing wastes, etc., may be acceptable for utilization on agricultural land. The persons utilizing this method of industrial sludge disposal must demonstrate that the sludge they are handling has a beneficial value for agronomic use and their disposal scheme will be performed in an environmentally acceptable manner. The sludge must be applied at not greater than agronomic rates for the crops grown and the generators must provide other

environmental safeguards to properly apply the sludge. Certain organic industrial sludges can be applied to agricultural land safely with minimal environmental problems. Adequate treatment, storage and application methods must be incorporated in all designs of these systems and contingency plans, such as sludge disposal in a landfill, must be developed.

The Agency will approve the use of some organic industrial sludges on agricultural land. The generators must demonstrate that the sludge they are handling is not a hazardous waste and has a beneficial value for agronomic use. Industrial sludges which are applied to off-site agricultural land are subject to the manifest system. The generators have the responsibility to insure that adequate disposal techniques are utilized.

PERMIT REQUIREMENTS BY DWPC

2. LANDFILLING OF INDUSTRIAL SLUDGE

Most industrial sludges do not have a beneficial agronomic value. Many sludges contain high levels of heavy metals, toxic organics or other waste material not recyclable and must be disposed of in a landfill. Testing is required to determine if the sludge is a hazardous waste. In any case, this sludge will be defined as a special waste. The sludge generator is responsible for initiating the manifest system, the hauler shall have in his possession a current, valid waste hauling permit and the receiver of the sludge shall have in his possession a current, valid operating permit and the neccessary supplemental permits. The generators must be assured that their sludge will be placed in a landfill, if that is its destination. (See Section H)

PERMIT REQUIREMENTS BY DLPC

3. INCINERATION OF INDUSTRIAL SLUDGE

Incineration of industrial sludge is an alternative. Selection of this alternative will depend upon economics and feasibility. The manifest system also applies to off-site industrial sludge incineration. The incinerator unit must also comply with the applicable air pollution emissions standards. (See Sections **F** & **H**)

PERMIT REQUIREMENTS BY DAPC & DLPC — COORDINATED PERMIT REVIEW

D

PUBLIC WATER SUPPLY SLUDGE DISPOSAL

1. LAND APPLICATION OF WATER TREATMENT PLANT LIME SOFTENING SLUDGE

Water treatment plant lime sludge is an excellent liming agent for agricultural purposes. The lime sludge must be applied at a rate to achieve ultimate soil pH for optimum crop yield.

The application of nitrogen fertilizers cause a reduction in soil pH. If optimum pH conditions do not exist, crop yields will be reduced. Therefore, farmers must apply sufficient quantities of lime as a means of counteracting the fertilizer applications.

Lime softening sludges can also aid in the reclamation of spoiled lands by neutralizing acid soils. Disposal of lime softening sludge on strip mine land will help minimize the discharge of acidic compounds.

Most water treatment plant lime softening sludges can be applied to land with minimal environmental problems. This Agency strongly recommends this

alternative be evaluated for disposal of all water treatment plant lime sludges. Lime sludge generators have the responsibility of assuring the proper ultimate disposal of their sludge. Before applying lime sludge, generators must provide the user with the chemical and physical information describing the product relative to its use.

PERMIT REQUIREMENTS BY DWPC

2. LANDFILLING OF WATER TREATMENT PLANT LIME SOFTENING SLUDGE

Although most lime softening sludges are an excellent liming agent for agricultural and land reclamation purposes, some lime softening sludges must be disposed of in a sanitary landfill. Some sludge generators have determined that it is more cost-effective or implementable to landfill their sludge rather than utilize other options.

Landfilling of lime softening sludge is a viable alternative for ultimate sludge disposal where cost-effective. The generators must be assured that their sludge will be placed in a landfill if that is its destination.

PERMIT REQUIREMENTS BY DLPC

3. LANDFILLING OF WATER TREATMENT PLANT ALUM SLUDGE

Although water treatment plant alum sludge is not considered a hazardous waste, this sludge must be placed in an Agency approved landfill.

Alum sludge has a tendency to cause soils to harden and does not provide any beneficial value. For this

reason water treatment plant alum sludge must not be applied to agricultural land. (See Section **H**)

PERMIT REQUIREMENTS BY DLPC

4. LANDFILLING OF WATER TREATMENT PLANT IRON REMOVAL SLUDGES

Some water treatment plants utilize a slow sand filter or settling pond for the treatment of iron filter backwash wastewater. The slow sand filter must be cleaned occasionally by removing the top 2 to 3 inches of sand and iron sludge. The material removed must be disposed of in a sanitary landfill. (See Section **H**)

PERMIT REQUIREMENTS BY DLPC

5. WATER TREATMENT PLANT ZEOLITE SOFTENING WASTES TO A SANITARY SEWER OR LANDFILL

a. Zeolite Softening Wastes to a Sanitary Sewer

Water treatment plants which soften water by the zeolite softening method produce a wastewater which has high concentrations of total dissolved solids and chlorides. Because of IPCB Rules and Regulations, 35 Ill. Adm. Code, Subtitle C, Chapter I: (Water Pollution), zeolite softening wastes cannot be discharged untreated to low flow streams. Furthermore, the wastewater treatment processes to reduce the total dissolved solids and chloride concentrations to acceptable levels are very energy consumptive and expensive. Zeolite softener regeneration wastewater should be discharged into a sanitary sewerage system.

PERMIT REQUIREMENTS BY DWPC

b. Zeolite Softening Wastes to a Landfill

The Agency realizes that sanitary sewer systems may not be available near some zeolite softening water treatment plants. In those instances, the Agency recommends the installation of holding tanks to store the liquid from the regeneration and rinse cycles, with this liquid to be disposed in a sanitary landfill. (See Section **H**)

PERMIT REQUIREMENTS BY DLPC

6. WATER TREATMENT PLANT FILTER BACKWASH WASTEWATER TO SANITARY SEWERAGE SYSTEM

Water treatment plant filter backwash wastewater can be discharged to a domestic wastewater treatment plant.

PERMIT REQUIREMENTS BY DWPC

E

AIR POLLUTION CONTROL SCRUBBER SLUDGE DISPOSAL

Air Pollution Control scrubber sludge must be properly managed in an approved storage, treatment or disposal site. (See Section **H**)

PERMIT REQUIREMENTS BY DLPC

F

INCINERATION OF SLUDGES

Various sludges have been treated by incineration. Incineration converts liquid and solid wastes into gases

and particulates and generates a residue which is smaller in volume than the original material. The sludge generator must determine whether its sludge is a hazardous waste. If the sludge is a hazardous waste the generator and person receiving the sludge must fulfill all requirements of RCRA and IPCB Regulations. If the sludge is not a hazardous waste, it will still be classified as a special waste and must be manifested pursuant to Section **H**.

All incinerators generate residue which must be disposed of properly. The residue may be in the form of an ash from the incinerator or sludge from the air pollution control equipment. Nearly all waste residues from incineration is landfilled since it has little or no recycling value, and may be classified a hazardous waste. Properly managed incineration can be an acceptable treatment method in Illinois' hazardous waste management program.

The Agency will allow incineration units for sludge disposal provided that proper planning and environmental safeguards are undertaken.

PERMIT REQUIREMENTS BY DAPC & DLPC — COORDINATED PERMIT REVIEW

G

INDUSTRIAL MATERIAL EXCHANGE SERVICE

Certain sludges or waste by-products, particularly from industrial operations, may be available for reuse and recovery by another industry or municipality. In 1981, the Agency and the Illinois State Chamber of Commerce developed the Industrial Material Exchange Service. The role of the Industrial Material Exchange Service is to act as an information clearinghouse designed specifically for use

by industry. Information is solicited and published for industrial by-products, unused surplus, off-specification materials, industrial wastes and hazardous wastes.

The initial action takes place when the listing form is completed by a company and sent to the Exchange at the Agency. The form provides confidentiality for those few firms which have expressed concern over a regulatory agency being a sponsor. These firms can send the form directly to the Illinois State Chamber of Commerce where they mask pertinent company information, assign a coded number, and then forward it to the Exchange. The Agency also provides confidentiality. If the information represents a trade secret, it is made unavailable for public inspection.

If a material is used directly by another party without treatment or alteration, the manifest system under Chapter 9 is not applicable as this material is not considered a waste. If the material is used indirectly after treatment or alteration, the manifest system is applicable.

PERMIT REQUIREMENTS AND/OR INFORMATION BY DLPC

H

DIVISION OF LAND POLLUTION CONTROL REQUIREMENTS

The Agency regulates the disposal of special wastes through its supplemental permit program which requires that the operator of a disposal site obtain an individual supplemental permit for each type of waste to be disposed in a landfill. In reviewing applications for supplemental permits, the hydrogeologic setting, site design, site operating history and composition of the waste is considered.

Proper management of special wastes is an issue which involves proper handling, treatment, storage, transportation and disposal. Within its statutory authority, the Agency has taken the following steps to assure proper disposal:

1. Development of a permit program to promote construction of environmentally acceptable disposal sites;

2. Maintenance of a statewide enforcement program; and

3. Implementation of a manifest system to require tracking of wastes from the "cradle to the grave".

The safe disposal of a special waste requires that generators and haulers deliver the waste materials only to properly permitted sites, utilizing the manifest system for off-site movement of special waste. With the implementation of Special Waste Hauling Regulations (Chapter 9 of IPCB Rules and Regulations), effective July 30, 1979, the Agency began tracking waste from its generator to hauler to disposer. The regulations also require that the special waste generator must originate the manifest. The manifest is a 6-part document listing the identity and source of the special waste, the hauler who has accepted the waste and the name of the receiver which must be an Agency permitted disposal, storage or treatment site. Part V of the Special Waste Hauling Regulations states the requirements for each participant in the manifest system along with reporting and record keeping requirements.

At least two permits are required to begin operation of a new landfill for ultimate waste disposal. A developmental permit is required to allow the construction and development of the landfill. To reduce the potential for

pollution the Agency examines three main areas: site hydrogeology, site engineering and the effect of the site on the surrounding land. No waste can be accepted at a site until an operating permit is issued by the Agency. All solid waste rules and regulations and conditions of the developmental permit must be satisfied. The operating permit includes special conditions which must be met during operation of the site.

For a site to accept special wastes, a supplemental permit must be obtained for each specific waste. The fact that a site has an operating permit to accept general waste does not guarantee it will be allowed to accept special wastes. Most landfills which are permitted by the Agency to accept special waste practice co-disposal. Co-disposal means that special waste and general waste can be received at the same landfill.

If a site applies for a supplemental permit three key areas are reviewed:

1. The special waste characteristics;

2. The compatibility of the special wastes with the previously disposed wastes; and

3. The site operating history.

If the site is not being operated according to standards set by the Agency, a supplemental permit will not be issued. The permit application must contain a chemical analysis of the special waste so that a determination can be made that the waste is compatible with previously deposited waste.

Please note that Section 21d. of the Illinois Environmental Protection Act states the following:

"No Person shall ....
Conduct any waste-storage, waste-treatment, waste-disposal, or special waste-transportation operation without a permit granted by the Agency or in violation of any conditions imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder; provided, however, that no permit shall be required for any person conducting a waste-storage, waste-treatment, waste-disposal, or special waste-transportation operation for wastes generated by such person's own activities which are stored, treated, disposed or transported within the site where such wastes are generated; ... "

The above Section is only applicable to Land Pollution and Refuse Disposal Regulations and does not apply to sludge disposal sites covered elsewhere by this document.

I

DIVISION OF WATER POLLUTION CONTROL REQUIREMENTS

The Agency regulates the disposal of sludge on land through its permit program which requires that persons applying sludge to land must obtain permits from the Division of Water Pollution Control. 35 Ill. Adm. Code 309.204(a) of Chapter I, Water Pollution Regulations of Illinois, states the following:

"No person shall cause or allow the use or operation of any treatment works, pretreatment works, or wastewater source without an Operating Permit issued by the Agency....."

Section 583.05 of the Wastewater Land Treatment Site Regulation Act of 1973 states the following:

> "No person may establish, operate, manage or maintain any wastewater land treatment site or any digested sludge utilization site without first obtaining a permit from the Illinois Environmental Protection Agency."

Since proper sludge disposal is an integral portion of any treatment works operation and, due to the above mentioned 1973 Act, sludge operating permits are required for all sludge generators who apply sludge on land for any use. Sludge entrepreneurs are also required to obtain permits for land application of sludge. In order to obtain a permit, generators are required to submit a sludge management plan to the Division of Water Pollution Control. Sludge management plans must indicate how the generator will treat, store, transport and dispose of sludge in an environmentally acceptable manner. The plans must include necessary application forms, sludge analyses for various chemical constituents, a narrative description and agronomic calculations.

The narrative description of the sludge management plan is to include a detailed description of the land to be utilized such as slope, closeness to streams, roads, wells, houses, buffer strips, transportation, application techniques, groundwater depths, soil regiment and any other pertinent information.

The agronomic calculations must indicate the amount of sludge that can be applied. These calculations are keyed to the type of crop to be grown on the sludge amended land and the chemical composition of the sludge. Corresponding heavy metal calculations are also required and must indicate the amount of heavy metals intended to be applied to the land. Sludge management plans must

also include a commitment by the generator to periodically reanalyze the sludge for various chemical constituents and adjust any agronomic and heavy metal loadings.

Sludge management plans must also include user information sheets for all public distribution programs advising all persons how to properly utilize sludge. In addition to the above requirements it is recommended that a public relations program be developed. Advising the public of the benefits of sludge application and the environmental considerations which have been given to the safe disposal of sludge has proven to be a valuable asset. Good public relations programs avoid potential problems with an uninformed public.

J

DIVISION OF PUBLIC WATER SUPPLIES REQUIREMENTS

The Agency regulates the disposal of water treatment plant sludge or residues through its permit program administered by the Division of Public Water Supplies. Section 2 1 2 J of the Division's Technical Policy Statements adopted pursuant to 35 Ill. Adm. Code 602.115 of IPCB Board Rules and Regulations, Subtitle F: Public Water Supplies states the following:

> "The engineer must include in a preliminary engineering report and/or the basis of design summary, data regarding waste residues and disposition. When water plant waste treatment facilities are necessary, they must be included as part of the engineering plans and specifications. Data must include character and volume of waste (including concentration in milligrams per liter), location, and frequency of discharge.

If water plant wastes are to be discharged to a sanitary sewerage system, a copy of the approval letter from the owners of the sewer system and/or sewage treatment works must be submitted with the plan documents. Data pertaining to the waste discharge must include the data requested in the above paragraph plus the following: sewer system plat map showing location size and slope of sewer lines from the point of connection at the water plant to the sewage treatment works; location of manholes; lift stations and overflows along the route; and capacity of lift stations.

All public water supplies having or proposing treatment, such as lime softening, purification, iron removal and/or ion exchange softening, which produces a waste discharge to waters of the state, must construct treatment facilities to properly treat the water plant wastes to a level prescribed by the Illinois Pollution Control Board Rules and Regulations, 35 Ill. Adm. Code, Subtitle C, Chapter I: (Water Pollution). Approval for the construction of the waste treatment facilities requires that an "authorization to construct" be obtained from this Agency. If the waste treatment facilities are a part of a permitted plant improvement, the "authorization to construct" will be a special condition of the construction permit issued by the Division of Public Water Supplies. Approval for the construction of waste treatment facilities only will be in the form of a document titled "authorization to construct".

Approval for operation of the waste treatment facilities will be the National Pollutant Discharge Elimination System (NPDES) permit. An NPDES permit for the discharge must be obtained prior to the initiation of waste treatment facility start-up. Application for an NPDES permit must be filed at least 180 days prior to the time when start-up of the waste treatment facility

is desired. An NPDES permit is not required when the water plant wastes are discharged to a sewage treatment plant or a recycling (closed loop) waste treament system. However, a construction permit for the connection of the water plant waste piping to the sewer system or the construction of the recycling system must be obtained from the Division of Public Water Supplies".

Disposal of water treatment plant sludges into a landfill must be accomplished in accordance with the Division of Land Pollution Control requirements. (See Section H)

Although the Division of Public Water Supplies administers the permit program for the land application of water treatment plant lime sludge, the application must be performed in a manner consistent with the Division of Water Pollution Control requirements. (See Section I)

The application for permit to land apply lime sludge must include a management plan which addresses the rate of sludge application based upon different farmland soil characteristics, method of application, application precautions and an analysis of the lime sludge.

K

DIVISION OF AIR POLLUTION CONTROL REQUIREMENTS

The Agency regulates the incineration of sludge through its permit program administered by the Division of Air Pollution Control. Incineration is a technically viable and environmentally acceptable alternative to the land or water disposal of liquid organic wastes and sludges. Incineration converts liquid and solid wastes into gases and particulates and generates a residue which is smaller in volume than the original material. Pursuant to Rule 103 of

the IPCB Rules and Regulations, Chapter 2: Air Pollution Control, the Agency must issue permits for construction and operation of incineration facilities. In the past, few applications for hazardous waste incinerators were received due in part to the difficulty of meeting air pollution standards and relatively high costs as compared to landfilling. With the advent of new rules regulating hazardous waste disposal sites and the associated increase in costs and long-term liabilities, an increase in the use of incineration is expected as it becomes more cost competitive and environmentally sound.

The person receiving sludge for incineration must comply with applicable emission and air quality standards. If the incinerator is determined by the Agency to be a major air emission source, additional air emission permit requirements and procedures are necessary depending on the attainment status of the area where the facility is located.

Generally, air pollution control equipment is required to meet air emission standards. Specifically, the sludge incinerator must meet the provisions of the particulate matter, sulfur dioxide, nitrogen oxide, carbon monoxide and organic material emission limitations of the Chapter 2 Regulations. If hazardous wastes are being incinerated, additional review for toxic and hazardous emissions is required to assure that no significant air quality degradation will take place.

Incineration of wastes containing more than 10% sewage sludge (dry basis) produced by municipal sewage treatment plants or each incinerator that charges more than 2,205 lbs. (1,000 Kg) per day of municipal sewage sludge (dry basis), must meet the requirements of the New Source Performance Standards, Subpart O (40 CFR, Part 60). These performance standards set forth emission limitations, require monitoring of operations and testing of stack performance.

Incinerators must also meet the requirements of the National Emission Standard for Hazardous Air Pollutants, Subpart C (40 CFR, Part 61), where applicable. In addition to the emission standards, monitoring requirements, stack testing requirements and ambient air monitoring may also be required. The facility receiving the sludge must also incorporate adequate storage and handling techniques in its design to insure proper safety precautions. The facility operator must also account for any ash residue generated and provide for its proper storage and ultimate disposal. Disposal of this ash in a landfill must be accomplished in accordance with Division of Land Pollution Control requirements. (See Section **H**)

This Agency will allow incineration units for sludge disposal provided that proper planning and environmental safeguards are undertaken.

APPENDIX

Agency Permit Sections

Division of Air Pollution Control
Bharat Mathur, Manager
Permit Section
217/782-2113

Division of Land Pollution Control
Thomas Cavanagh, Manager
Permit Section
217/782-6762

Division of Public Water Supply
Roger Selburg, Manager
Permit Section
217/782-1724

Division of Water Pollution Control
Thomas McSwiggin, Manager
Permit Section
217/782-0610

ADDRESS FOR ALL ABOVE IS:

2200 Churchill Road
Springfield, Illinois 62706